

## Pan & Tilt

The HLK-2150 pan & tilt is a compact, light-weight, medium duty hydraulic pan and tilt unit designed to work reliably on all types of submersible systems. It is ideally suited for the positioning of cameras, lights or survey equipment and can be installed to the end of camera booms for pipe inspection activities.

The tilt hydraulic connections are ported into the rear of the body, while the pan ports are located at the end of the actuator tubes. Ports are available in 1/8" BSPP in accordance with ISO 1179 and 7/16" SAE in accordance with SAE J1926-1.

In addition to the HLK-2150 pan & tilt unit, it can be paired with the HLK-6000 double pilot operated check valve to ensure accurate position holding of the tilt function.

The rotate function is a rack and pinion design while the tilt function is a double acting actuator. The cylinder tubes are made of corrosion resistant 316 stainless steel while the body and bracket are manufactured of 6082 aluminium with a 50 micron hard anodized surface.



## Features

- Porting available in 1/8" BSPP or 7/16" SAE in accordance with ISO 1179 & SAE J1926-1 respectively
- Constructed from corrosion resistant materials
- Compact & lightweight @ only 3.4kg (7.5lb) in water
- Pan travel of 360 degrees and a tilt travel of 180 degrees

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## Technical Specifications

### General

Function	Pan & Tilt
Materials	316 Stainless Steel, 6082 Aluminium
Product Finish	Hard Anodised
Seal Material	Nitrile/NBR/Buna-N, PTFE
Ports	1/8" BSPP (ISO 1179) or 7/16" SAE (SAE J1926-1)
Dimensions	(H) 300mm x (W) 229mm x (D) 77mm (11.8" x 9" x 3")
Weight in Air	4.5kg (9.9lbs)
Weight in Water	3.4kg (7.5lbs)
Pan Travel	360 Degrees
Tilt Travel	120 Degrees

### Hydraulic Performance

Maximum Working Pressure	207bar (3000psi)
Flow	3lpm Maximum (0.79gpm)
Fluid Type	Mineral: DIN 51524, ISO 11158, ISO 6743-4, ASTM D6158 Synthetic: Panolin Atlantis, HLP-Synth
Viscosity	16cSt to 220cSt. VG 22-32 Recommended
Temperature	5-60°C (41-140°F)
Cleanliness Requirements	ISO 4406:19/17/14, NAS 1638:8, AS4059:9A/8B/8C

### Mechanical Performance

Pan Torque	38Nm @ 140bar (28lbf.ft @ 2000psi)
Max. Payload	10kg (22lb)

### Environmental

Operational Depth	3000msw (9,840ft)
Operating Temperature	5-60°C (41-140°F)
Storage Temperature	0-70°C (32-158°F)
Humidity	0% to 100% Condensing

**Saab UK - World leader in electric underwater robotics**

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SPECIFICATIONS MAY CHANGE WITHOUT PRIOR NOTICE AND ARE SUBJECT TO SYSTEM CONFIGURATION